

HOME READING.

For The Citizen

Ballade of Ye Vassar Girls.

(Adaptation.)

Ye Vassar she has just "put her gown on,"
She's learned to knit in "Greek."
Her gown tells her she's with a heart on,
And grandly romances with a shawl;
Her heart perhaps she is weak,
But she's alone with a sigh,
In Niagara—there she's unique,
But her forte's to eliminate I.

"We can talk about putting 'spirit on,'"
I admit an unadvisedly freak;
She's clearly delighted to fawn on
A point in some shadowy creek;
She can swim as a swallow can fly;
She can fence, she can put with a cleek,
But her forte's to eliminate I.

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She has lectured on Scopas and Myron,
Gems, vases, mosaics, the antique
With the secular ditties on,
Old marches with notes to seek;
And her Collet she quotes by the week.
She's written on KEV and Kai,
Her service is swift and oblique,
But her forte's to eliminate I.

X. L. P.

The Telephone.

One of the most striking characteristics of the present age is the marvelous rapidity with which useful inventions are introduced. The telephone is a striking example of this. The first public exhibition of the telephone was in the year 1876, at the Centennial Exhibition in Philadelphia. In the following year the first telephone exchange was established in Boston with five subscribers. With extraordinary forethought, the primitive switchboard installed in our cut was made strong enough to contain switches for five subscribers in addition to those who originally joined the exchange. It soon became evident that the telephone system was destined to extend more rapidly than was at first believed possible, and the original switchboard was never filled up, but was supplanted by a more comprehensive arrangement.

To give an idea of the rapid development of telephonic communication, it may be interesting to show how the Boston exchange has grown to its present proportions. It has many times outgrown its quarters, and besides the principal exchange, there are now two branch offices and seventeen suburban exchanges in direct connection, and more than two hundred cities and villages in New England may be reached by telephone from Boston. The new "central office" is furnished with the latest form of multiple switchboard, manufactured by the Western Electric Company, Chicago.

The capacity of this board is 3,500 lines, and together with the two branch offices gives Boston a capacity for nearly 6,000 lines. The number of subscribers in Boston, April 1, 1884, was 2,386. Taking the increase in the United States, the figures are even more startling. In May, 1877, there was but one exchange with five subscribers; in January, 1884, there were 906 exchanges, with 123,625 subscribers.

Although the telephone has attained its present importance within the last decade, and the first announcement of Professor Bell's invention must still be fresh in the memories of most of our readers, yet a condensed history of this wonderful invention will not be out of place.

The credit of first conceiving the possibility of transmitting articulate sounds by electricity is due to Prof. A. Graham Bell. His familiarity with the applied sciences, particularly acoustics, dates from early youth. He was instructed by his father, who was engaged in the difficult task of teaching the deaf to articulate, in the physiology of the human throat and ear. Even when quite a boy, young Bell had ingenuity enough to construct a talking machine which would utter one or two simple words. About ten years ago Prof. Bell was engaged in increasing the efficiency of the electric telegraph by employing the vibrations of reeds of different pitch in connection with the usual telegraphic apparatus. While engaged in perfecting his system of harmonic telegraphy, he conceived a method of making a complicated receiver, consisting principally of a set of rods of different pitch, giving forth tones corresponding to those entering a similar transmitter connected by an electric current with the receiver, much as the strings of a piano will respond to the human voice. Coupled with the then recent discovery of Helmholtz, that the vowels and other vocal sounds were simply the combination of several elementary notes, Prof. Bell at once perceived the possibility of transmitting speech.

It only remained to try the experiment, and to improve and simplify the apparatus, in order to make his invention practically useful in everyday life. Immediately on the publication of Prof. Bell's success in transmitting speech by electricity, the whole scientific world turned with interest on the new wonder. Many improvements were soon made in the details of the telephone, and other inventors, as Edison and Hale, produced transmitters of greater power and better suited for actual service. Prof. Bell's instrument, as a receiving telephone, however, Prof. Bell's invention is in universal use in almost the exact original form, and it seems unlikely that it will be superseded by any another receiver, so perfect and simple is it at the present time.

The extent and variety of experimental work for improving the telephone now being carried on by the American Bell Telephone Co., and the facilities which they possess for continuing this work, are not generally known, and it is our object to illustrate and describe these facilities. Inventions connected with the telephone are continually being offered to the company, and which appear to have merit are carefully examined, and adopted or rejected according to their value. Often those inventions which are purchased by the company require more or less modification to adapt them to practical use. To successfully carry out the objects located above, the company employs a corps of expert mechanics and others skilled in the principles and practice of electricity and its allied sciences, and has provided an experimental shop, a chemical laboratory, and an electrical testing-room, fully equipped with the necessary machinery and apparatus. An experimental shop, is well supplied with such tools as are required for producing and altering electrical apparatus. It has a

Real Cause of Niagara's Decline.

A correspondent of the *New York Evening Post*, writing from Niagara, says: "I see two classes of facts at Niagara. There is abundant proof that there is a large class or number of people in our country who feel the charm and worth of beautiful scenery, and who find great delight and refreshment in the natural loveliness and grandeur peculiar to this place. Each year people of this class are less and less inclined to visit Niagara, and their aversion is due to the increasing disfigurement and destruction of the scenery. The desolation and ugliness through which one must now pass to reach Goat Island, and all the best places from which to see the Falls, repels far more of the better class of visitors than are kept away by the presence of the excursionists. It may or may not be strange, but it appears to be true, that the people who are interested in 'commercial enterprises' near the Falls have no feeling for beauty, and some of them appear to have a morbid and horrible delight in littered and disorderly ugliness. This belongs to the sordid, discouraging class of facts respecting our national character and feeling. We have multitudes of people who cut and destroy the finest trees and shrubs about the Falls (the excursionists are not worse than other visitors), and who cut up and pull to pieces, whenever it is possible, the seats and railings provided for their pleasure and safety. At many points on Goat Island from which good views can be obtained comfortable seats furnish opportunity for rest. Each one must be constructed of heavy timber and have an iron rod attached which holds to a broad foot, or anchor, many feet underground, or which will be torn up and thrown into the river. Well-dressed ladies stand by and applaud while the gentlemen of their party do these things. In what schools, Sunday schools, and churches are these people educated, and what is the nature of the instruction by which their character is formed?

In order to meet as far as possible the public demand for underground wires, the company has been and is now making extended experiments upon various makes of submarine cables, with as yet only partial success. To give an idea of the vast sums of money the company is expending in this experimental work, it is only necessary to state as a single example that one of these cable experiments cost \$30,000, and that this is by no means the maximum outlay for a single experiment.

Of the future possibilities of the telephone little can with safety be said. Recently an invention has been brought out for making the telephone an accurate timekeeper. By means of a simple apparatus, including an accurate clock stationed at the central office a signal is given once a minute indicating the precise time, somewhat after the manner of a repeater watch. This system is now on trial at Lowell, Mass., and seems likely to be generally introduced.

The Bell telephone exhibit at the Electrical Exhibition now in progress at Philadelphia is well worth the careful attention of visitors. It forms one of the most prominent features of the exhibition. The whole history of the telephone from its first conception to the present complex system is well illustrated by models, some of the original being on exhibition. Many forms of apparatus now discarded from use are shown, and all the latest improvements, including the most recent style of multiple switchboard, may be seen.—*Scientific American*, October 4th.

A New Scheme for Lovers.

At a recent wedding reception in South Carolina, a young lawyer begged leave to offer a new scheme of matrimony, which he believed would be beneficial. He proposed that one man in the company should be selected president; that this president should be duly sworn to keep entirely secret all communications that should be forwarded to him in his official department that night, and that each unmarried gentleman or lady should write his/her name on a piece of paper, and under it the name of the person they wished to marry, then hand it to the president for inspection, and if any gentleman and lady had reciprocally chosen each other, the president was to inform each of the result, and those who had not been reciprocally chosen kept entirely secret."

The truth is that manufacturers and capitalists can wholly destroy the beauty of the Falls, and they are likely to do so, and to make the place one in which no human being can ever feel joy again. Another misconception is the notion that the people here have so impaired their property and lowered its value that they are now anxious to have the State, or the country, take it off their hands, paying them a good price for it, and that they are likely by and by to beg to sell out." Nothing could be further from the truth. The value of the land here is increasing year by year, and what threatens the final destruction of Niagara is the fact that the very land that is essential to the beauty here has become so valuable for manufacturing purposes that the present owners cannot afford to keep it for the sake of the scenery. These errors should be corrected, and should not hereafter be repeated by journals of character and influence.

If the people of the State of New York shall decree the purchase and preservation of Niagara, it will be an important step in its bearing upon natural character and civilization. It will help to prepare us for wiser treatment of some matters of serious moment than we have hitherto been able to give them."

Real Cause of Niagara's Decline.

The most affirmatory expressions on this subject are the most welcome ones. Glittering generalities are the equivalent of despair; positive assertion has a magic charm all its own. No good man ever yet died who was not better off after death than before. If we believe this, we ought not to be sorry for him, but only for ourselves. To put on mourning because a soul has gone to glory, and is more sweetly cared for than by our most devoted love, seems strangely incongruous. To put on mourning because his heavenly gain is our earthly loss, and because, forgetting his gain we remember only our own loss, is to give public expression to our selfishness.

Then, alas, the funeral is not a private but a public occasion. There is a coloring of worldly pomposity. Anybody and everybody may intrude on the sanctity of bereavement, and witness with curious or sympathetic eye, as the case may be, the exhibition of domestic sorrow. If there is one exclusive on earth, it is the chamber of death; if there is any moment when one has the right to be alone, it is when he is looking into the face of his dead. You and God are enough at such a time. How much better it would be to appoint a season when the friends and acquaintances of the departed may take their last look and say their silent farewells; to set apart, for example, the afternoon before the burial for this purpose, and to make the services with the family strictly inexorably private. One cannot help shrinking from a public display of his torso and sorrowing soul when he is bending over the body of his loved and lost. It is cruelty to compel him to let the world in his privacy in that hour. That a mere casual acquaintance, who has hurriedly left his business or his pleasure to be present, because it is a proper thing to do; that comparative or perhaps perfect strangers should feel at liberty to come into your house to see how you will behave under such circumstances, and to witness the most solemn scene of your life—is something unutterably repugnant to me.

The people have, to a certain extent, but not extensively, perhaps, grown into my view of the matter, and latterly it has been the custom—I was almost tempted to use the hateful words, the fashion—for the immediate relatives to retire to an upper room during the services. Like all half reforms, this change is in some respects, worse than the evil of which I complain. The bereaved family actually surrender the body of the loved one to the keeping and gaze of the more or less indifferent, whereas it would seem to be more natural and proper to gather about the white remains themselves, to the rigid exclusion of all intruders. They shrink from permitting their neighbors to count their tears, and their return to an upper chamber while the burial service is being read, is a feeble protest against making a display of a bleeding heart. What we have, however, is not a feeble protest, but an iron-bound reformation.

Under existing circumstances, the minister's position is one of peculiar embarrassment. It is not simply deplorable, it is painful. He cannot take his place in the midst of the mourning ones, where alone he belongs, and address himself wholly to them, nor can he take his place in the drawing room where acquaintances and strangers are gathered, and address himself wholly to them.

A compromise is effected, and he is requested to stand somewhere on the stairs, midway between the little group above and the great crowd below, with a blank wall in front of him which seems to grow whiter every minute, as though in amazement at the eccentricity of the proceeding, and with no one in sight except the conventionally and commercially grave sexton and his assistants. A minister mounted on a ladder and talking to an invisible congregation is a picture not merely ridiculous, but also shocking to anything less than nerves of iron. To make matters worse, though that was quite unnecessary, he finds it impossible to speak in the subdued tone which is so natural when the heart is in trouble, and must needs borrow the town crier's voice with which to make the whisperings of the consoling Gospel heard. For myself, I always feel at such times like saying to the crowd: "Good friends and neighbors, go home. Let us have perfect quiet here and no curiosity. In this house, to-day, there is only room for God, the bereaved ones, and the bearer of Christ's message!"—*The Congregationalist*.

Charles A. Abbott, writing in *Science*, asserts that the hibernation of reptiles varies much according to the severity of the winter. Many turtles take refuge in the deep holes of ponds, and Doctor Abbott asserts that, in severest cold weather, he has caught the snapping turtle, the musk turtle, and the box mud turtle in deep holes and about large springs that discharge their waters on level ground.

As fish have been found partly eaten when taken in nets in mid-winter, Doctor Abbott concludes that the snapper takes an occasional meal. At the same time, he does not deny that the species found active in winter hibernate under certain conditions, and that the other species of turtle hibernate.

Snakes which live in water do not sleep so deep a winter sleep as do the black snake and others which frequent the up lands.

The true water snake (*Tropidonotus sphenophorus*) may often be found in winter a foot or two beneath the sand of any spring hole, and is not slow to swim off when thus disturbed. This species and the common garter snake are the first to appear in the spring.

The upland snakes may be literally broken into pieces without giving evidence of life, so thoroughly torpid are they.

Toads and tree frogs, terrestrial and arboreal animals, are more sensitive to cold than the water living frogs and salamanders.

Frogs at the commencement of winter retreat to the bottom of ponds and deep ditches, salamanders, to the mud at the bottom of springs.

All the kinds of frogs and three species of salamanders have been found in a hogback head sunk in the ground to collect the waters of a spring. They were sluggish, but not actually hibernating.—*Scientific American*.

Said a wild Boston boy to a lecturer: "You'd make a good martyr. You'd burn well. You're so dry."

A Montana girl has been kidnapped by a bear. She probably got one hug from the animal and followed it off.

"I find that with light meals my health improves," said an Esquimaux; and down went another candle.

Drunkenness is a pair of spectacles to see the devil and all his works.

What Might Have Been.

BRAVE IN THE WHITE HOUSE.

A servant said the President would be down as soon as she finished trying on her dress. The Attorney General took out her knitting and said: "Well, I might as well be working. No telling how long we'll have to wait." Eager attention on the part of Cabinet interrupted by the servant's announcement:

Her Excellency, the President of the United States,

"Good morning, ladies."

"Good morning, Mrs. President." [All in chorus.] "Oh! what a lovely dress."

"Yes," said the President, "I thought I would just wear it down and let you all see it. It is pretty, isn't it? Just look at the hang of the train."

"It's perfectly magnificent," said the Secretary of War. "Those fine plaitings of crepe de chine give it such a lovely finish. But isn't it just a little short in front?"

"Why, of course," said the President, with some asperity, "I have them all made that way so as not to have to change when I ride the tricycle."

"I hope it's all silk," said the Attorney-General, sticking her knitting needle through her back hair, while she rubbed a piece of dress between her thumb and finger. "Did you save me a piece for my crazy quilt?"

"Oh, yes," answered the President, affably. "And now let's get to business, ladies. I haven't much time this morning. I have to sit for my picture at 1 o'clock."

"The most important business I know of," said the Secretary of State, "is to decide on a Minister to the Court of St. James. You know Lowell has asked to be recalled."

"Oh, yes; I forgot all about that," said the President. "Whom shall we send?"

"If it had only been earlier," said the Assistant Secretary of the Navy, reflectively, "I would have gone myself, but the season is over by this time, and then I get so horribly sea-sick."

"It will be hard to get any one to go, observed the Secretary of War. "I am told the climate is so damp that your hair never stays in curl at all."

"Is that so?" asked the President, apprehensively. "Well, we must send some one. And then," the President went on, "there's Germany to provide for."

"Oh, what's the use of sending any one to Germany, Mrs. President?" asked the Secretary of War.

"Oh, don't you know," said the Secretary of State, "there's Herr Most and pork and Lasker and Bismarck and all those things to talk about?"

"I know there was a color called Bismarck some years ago," said the Secretary of the Treasury, meditatively, as she sorted her crewels, "but it was hideously unbecoming."

"But there's a new red brown this fall," said the Postmaster General, eagerly, "that's perfectly lovely for a dark complexion, though I think, myself, nothing wears as well as the old seal brown."

"Speaking of the seal brown," said the Assistant Secretary of the Navy, "how about the commissioner who was to be sent to Alaska to provide us all with seal skins? It's getting pretty cool; the frost touched my tube-roses last night."

Washington Republican.

Does Death Sting?

Dr. G. L. Beardsley, in the *Medical and Surgical Reporter*, concludes that the dread of dying is quite as intense as the instinct of self-preservation. Indeed, it is not improbable adds the doctor, that numbers would care less about living were the modes of leaving the world a theme for happy contemplation, or an innovation to the routine of plodding that was agreeable. One is remarkably exempt from the crime of hasty induction if he affirms that there is no sane or healthy mortal who anticipates his extinction with any degree of pleasure. The function of dying is absolutely vegetative—we fall to pieces like a flower. This very fact, that the process is chemical, confirms us in the conclusion that the final "three" is as painful as the inconvenience is nothing to the fatal pilgrimage when he touches on daylight.

A moment's examination of the way we are to die will show marks of goodness in our "taking off." The degree of sensibility is proportioned to the integrity of the tissues. An inflammation heightens it; age depreciates it. Any defect in nutrition of the individual until the disturbance of the carbonic acid generated in the devitalization of the blood becomes fixed in the cells or is no longer displaced. The sensory ganglia everywhere part with their irritability by virtue of this poison, and cease to conduct currents. The criteria of death are being satisfied, and the process is consummated when this extinction of sensibility prevails at the ultimate filaments.

During the progress of this dissolution of the nerve force, this creeping on the numbness of death, the individual is rapidly passing into a condition of repose, and instead of torture or pangs, a degree of self-satisfaction oft approaching enthusiasm is realized. The sensations peculiar to the therapeutic operation of opium, hashish, ether, etc., are not improbably akin to the mental activities of the dying. Barring the hallucinations experienced in the stupor of death, the moribund is familiar with naught that borders on suffering. This carbonic acid has poisoned or narcotized the several ganglia, and reflex productions are interdicted. A consummate analgesia prevails. In short, the notion of pain is foisted to excite a response. The condition to this irritability is that the nerve centre and track be sound. If this vigor vanishes, reflex phenomena are at an end, and suffering, physiologically speaking, is impossible, because of the arrest of the function of the sympathetic.

Promulgately, for a wholesome study of one's demise, there are assurances abundant, from vivisection, the testimony of those who have been restored to consciousness, and the affirmations of the dying, that there is no physical recoil from death. Burney tried hard to resist the efforts made to resuscitate him from drowning, so bewitched was he by his prolonged slumber. Dr. Solander, the traveler, was so delighted with the sensations of excessive cold, that he was the first to lie down in the snow to realize the luxury of such a death. Wm. Hunter was sorry he was not able to "write how easy and delightful it is to die." Infants die as serenely as they breathe, and not a few among the advanced in years treat death as a friend to

their infirmities. Hanging is naturally rated next to crucifixion, a most distressing procedure, refused to believe that they were to be beaten, and ruined again and again.

It is reported of those who were to be beaten, that they were saved from strangulation by the agony promised to be brief and was rapidly replaced by hallucinations of a fascinating variety.

One would fain believe that the kindred who suffered us